

Notice of Allowability

Application No.

09/605,654

Examiner

Christopher S. Kim

Applicant(s)

PACE ET AL

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed on April 5, 2004.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


Christopher S. Kim
Primary Examiner
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Khoi Q. Ta on May 14, 2004.

The application has been amended as follows (see amendment filed on February 19, 2004 for referencing claim numbers and line numbers):

In claim 1, line 2, --central-- has been inserted after "longitudinal";

In claim 1, line 9, --central-- has been inserted after "longitudinal";

In claim 1, line 11, --central-- has been inserted after "longitudinal";

In claim 1, line 13, --central-- has been inserted after "longitudinal";

In claim 1, line 14, --central-- has been inserted after "longitudinal";

In claim 2, line 2, --central-- has been inserted after "longitudinal";

In claim 3, line 2, --central-- has been inserted after "longitudinal";

In claim 8, line 5, --central-- has been inserted after "longitudinal";

In claim 8, line 10, --central-- has been inserted after "longitudinal";

In claim 8, line 12, --central-- has been inserted after "longitudinal";

In claim 8, line 14 (two occurrences), --central-- has been inserted after "longitudinal";

In claim 12, line 2, --central-- has been inserted after "longitudinal";

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Claim 13 has been amended as follows:

13. A method of generating a spray pattern from a fuel injector in a direct injection application, the fuel injector having [a body, a longitudinal axis, a needle slidingly disposed within the body, and a seat disposed at the fuel outlet] a fuel inlet, a fuel outlet, a fuel passageway extending from the fuel inlet to the fuel outlet along a longitudinal central axis, the fuel injector comprising:

a body;

a needle slidingly disposed within the body between a first position and a second position; and a seat disposed at the fuel outlet, the seat including:

a seat surface contiguous to a portion of the needle in the first position to form a seal between the fuel passageway and the fuel outlet, the seat surface being spaced from the portion of the needle in a second position of the needle to permit fuel flow through the fuel outlet, the seat surface being oblique to the longitudinal central axis; and

a plurality of passages, each of the plurality of passages having a passage surface extending along a central axis that defines an angle of inclination relative to the longitudinal central axis, a portion of the passage surface aligned on the same line with and contiguous to the surface of the seat on a common plane such that each central axis intersects the longitudinal central axis and each other at a common point on the longitudinal central axis;

the method comprising the steps of:

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providing the [seat with a plurality of passages, each of the plurality of passages having a central axis having an angle of inclination relative to the longitudinal axis] fuel injector; and

supplying fuel to the fuel injector so that a spray pattern is formed.

In claim 19, line 2, --central-- has been inserted after "longitudinal";

In claim 20, line 2, --central-- has been inserted after "longitudinal".

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: adding the label --Prior Art-- to figure 1. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

3. The following is an examiner's statement of reasons for allowance: The recitation "longitudinal central axis" has been considered to define the longitudinal axis which passes through the center-line of the fuel injector, i.e. the longitudinal axis which passes through the center of the fuel inlet and the center of the fuel outlet.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Claim 1 is directed to an allowable product. Pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86), claims 8-24 are, directed to the process of making or using the patentable product, previously withdrawn from consideration as a result of a restriction requirement, are now subject to being

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rejoined. Claims are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Since all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, the restriction requirement made in Paper No. 17 is hereby withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (703) 308-8336. The examiner can normally be reached on Monday - Thursday, 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Y. Mar can be reached on (703) 308-2087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christopher S. Kim
Primary Examiner
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